# NATIONAL POWER TECHNOLOGY

## POWER SUPPLY

NPT PART NUMBER 10A0029-07

## THEORY OF OPERATION

The AC line voltage in addition to chassis ground is connected to terminal block TB1 and after passing through fuse F1 and the EMI network consisting of C1 through C4 and L1 and thermistor R1 which limits the inrush current is presented to bridge rectifier CR16 and the bias transformer T1. If the power supply is configured for 115 volts, the 115 VAC jumper is in place and the bridge in conjuction with capacitors C5 and C6 acts as a voltage doubler developing about 300V DC between the positive and negative terminals of CR16. The 115 VAC jumper is removed to configure the supply for 230 VAC and the rectifier and capacitors function as a voltage doubling circuit which once again develops 300 volts DC across CR16. The bias transformer along with rectifier bridge CR17 and capacitor C17 develop approximately 15 VAC of bias which is used to power the pulse width modulator chip Z andcomparater chip Z2 which contains the soft start circuitry as well as the over voltage protection circuit.

Transistors Q1 and Q2 along with capacitors C5 and C6 form a 1/2 bridge as shown in the simplified schematic shown in Fig.1.

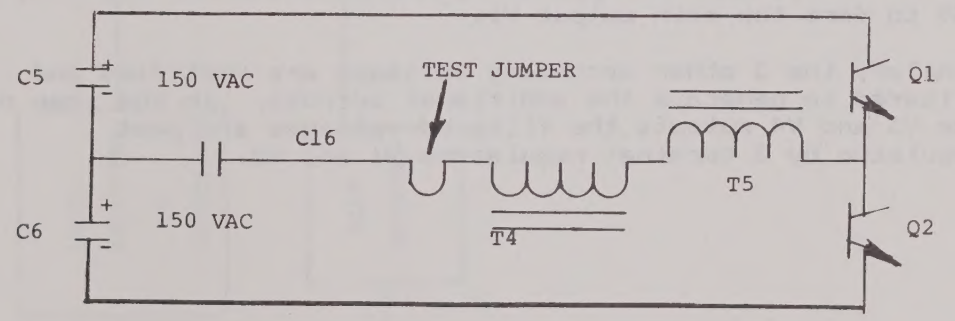



Fig.1: Simplified schematic of a 1/2 bridge converter.

Transistors Q1 and Q2 are turned on alternately to operated a quasi square wave voltage across the primary of the power transformer T5. This transformer primary voltage is sketched in Fig.2.

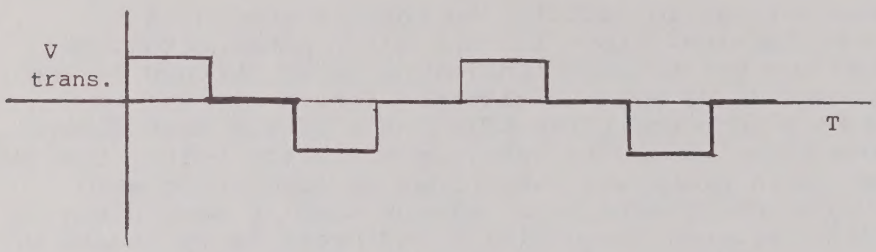
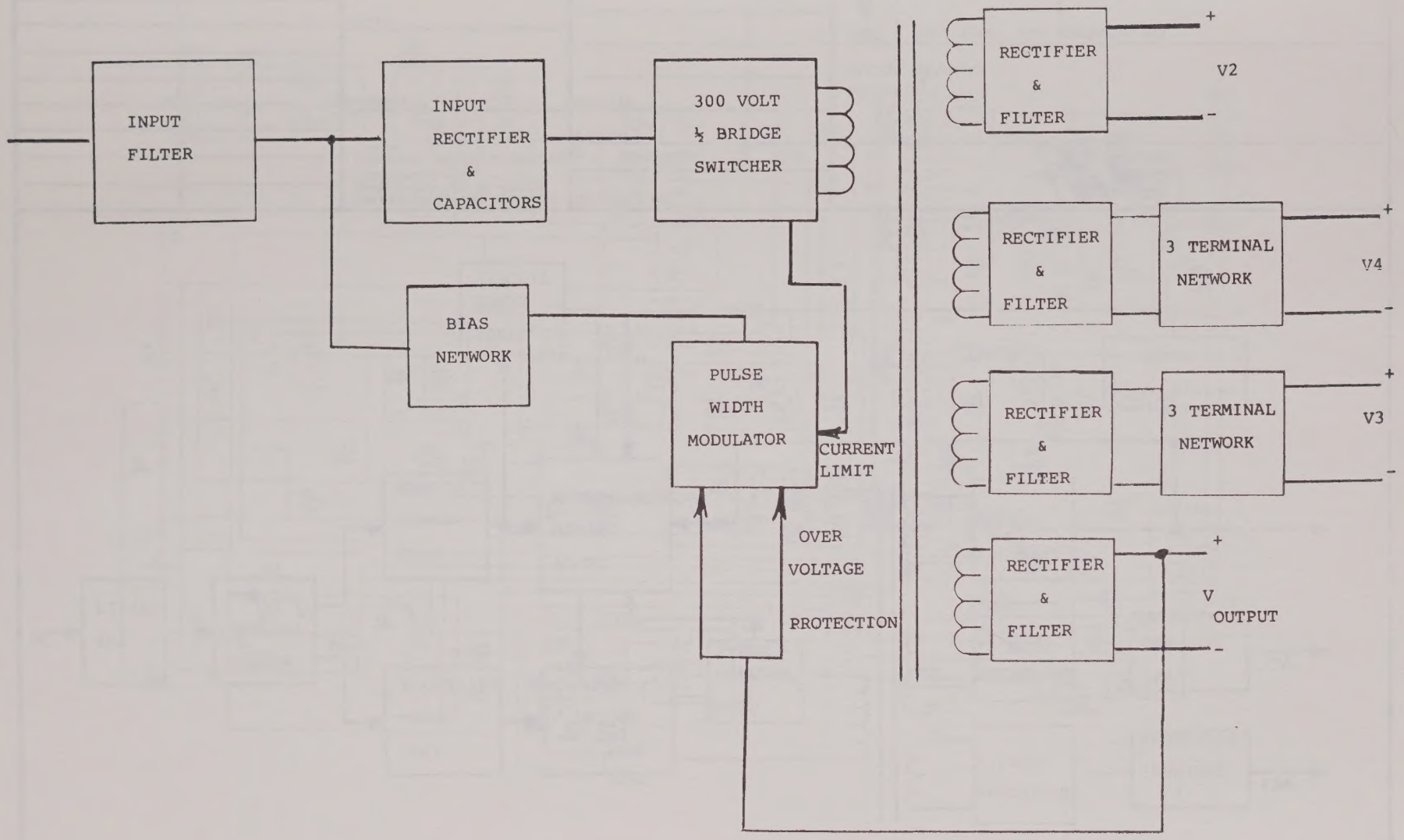



Fig.2: Transformer primary waveform

This voltage waveform multiplied by the approximate turns ratio appears at each of the 4 secondary terminals. Capacitor C16 blocks any DC current which appears in the transformer primary due to unbalances and current transformer T4 monitors primary circuit and establishes the current limit.

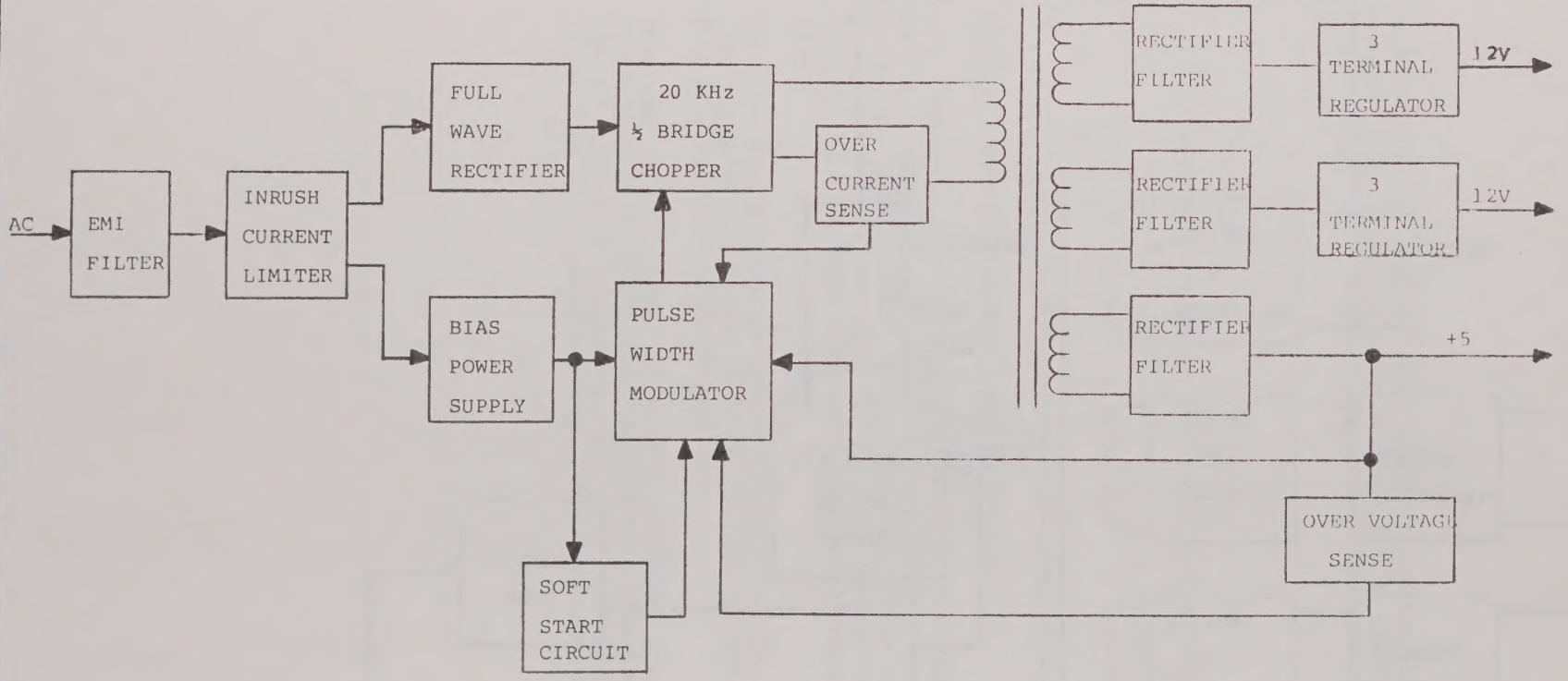
The secondary voltage appearing at pins 13,14 and 15 rectified by CR15 and applied to the LC filter L5 and C38, C39 to form the main output V1.

Similary the 3 other secondary voltages are rectified and filtered to generate the additional outputs. In the case of the V3 and V4 outputs the filtered voltages are post regulated by 3 terminal regulators V1 and V2.




BLOCK DIAGRAM OF 10A0029-07

| REVISIONS | | | |
|---|---|---|---|
| LTR | DESCRIPTION | DATE | APPROVED |
| | | | |




| | | | | | |
|---|---|---|---|---|---|
| | | UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS DECIMALS ANGLES ± .XX ± ± .XXX ± | CONTRACT NO. | | |
| | | | APPROVALS | DATE | |
| | | MATERIAL | DRAWN | | |
| | | | CHECKED | | |
| | | FINISH | | | |
| | USED ON | | | | |
| APPLICATION | | DO NOT SCALE DRAWING | | | |

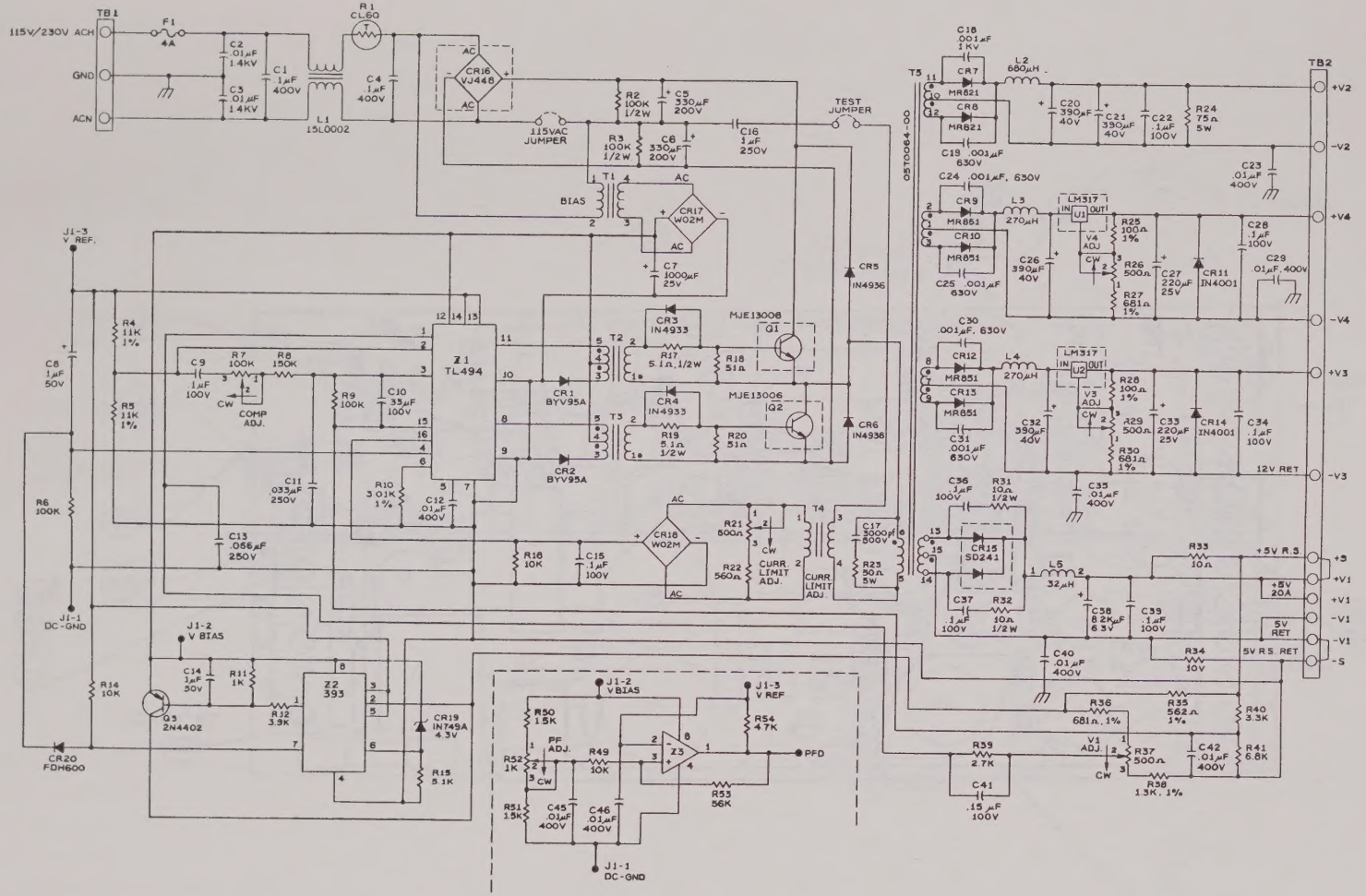
NATIONAL POWER TECHNOLOGY

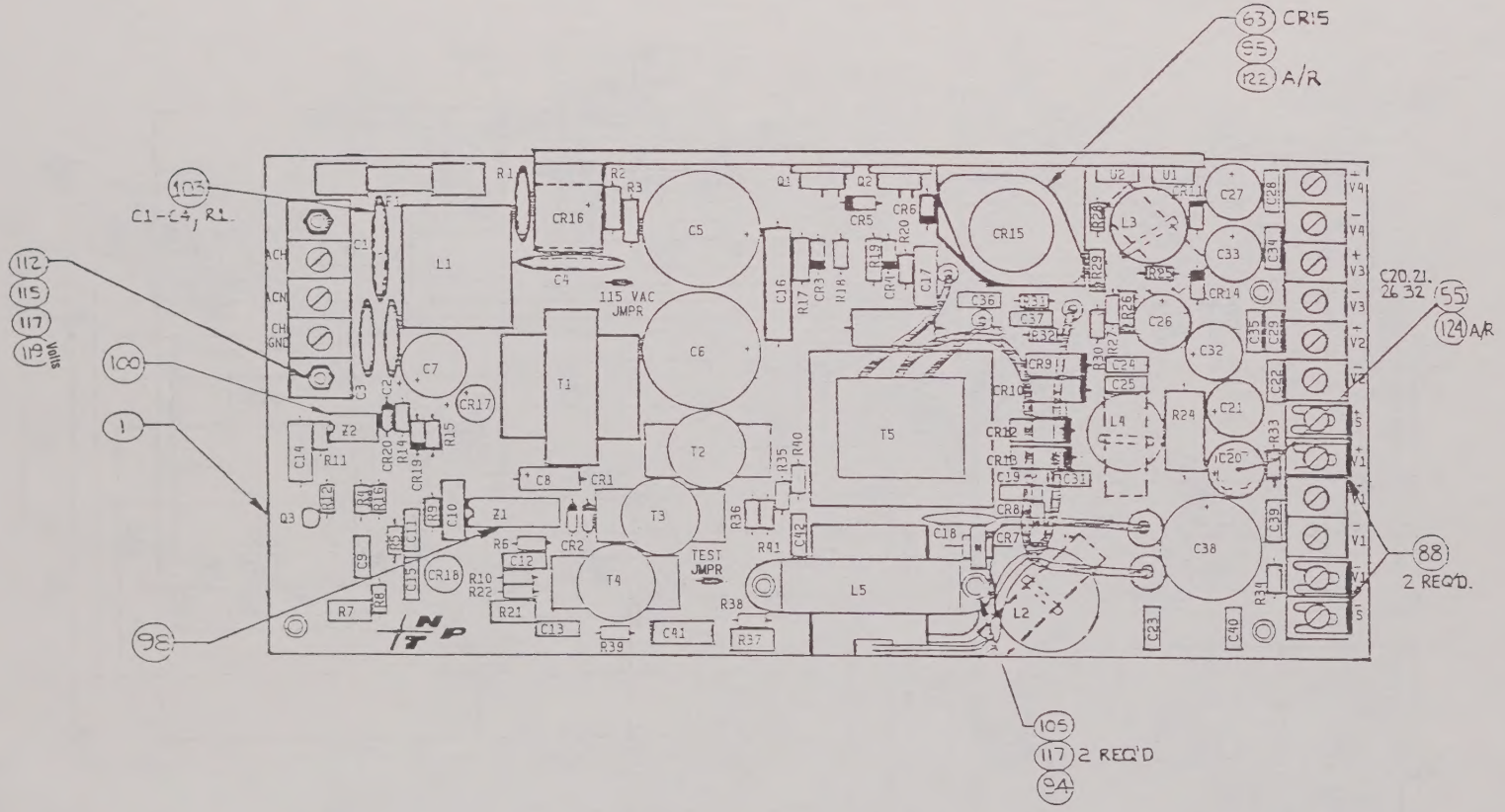
10A0029-07
BLOCK DIAGRAM

| SIZE | CODE IDENT NO. | DRAWING NO. |
|---|---|---|
| A | | |

SCALE | SHEET

BISHOP GRAPHICS/ACCUPRESS


TB1
115V/230V ACH
GND
ACN
F1
4A
C2 .01µF 1.4KV
C3 .01µF 1.4KV
C1 1µF 400V
L1 15L0002
R1 CL60
C4 1µF 400V
CR16 VJ448
115VAC JUMPER
R2 100K 1/2W
R3 100K 1/2W
C5 330µF 200V
C6 330µF 200V
C16 1µF 250V
TEST JUMPER
T1
BIAS
CR17 W02M
C7 1000µF 25V
CR5 IN4936
CR6 IN4936
J1-3 V REF.
C8 1µF 50V
R4 11K 1%
R5 11K 1%
R6 100K
J1-1 DC-GND
J1-2 V BIAS
C9 .1µF 100V
R7 100K
R8 150K
CW
COMP ADJ.
R9 100K
C10 33µF 100V
C11 .033µF 250V
C13 .056µF 250V
Z1 TL494
R10 3.01K 1%
C12 .01µF 400V
CR3 IN4933
CR4 IN4933
T2
T3
R17 5.1Ω, 1/2W
R18 51Ω
R19 5.1Ω 1/2W
R20 51Ω
MJE13006 Q1
MJE13006 Q2
CR1 BYV95A
CR2 BYV95A
R16 10K
C15 1µF 100V
CR18 W02M
T4
R21 500Ω
R22 560Ω
CW
CURR. LIMIT ADJ.
R23 50Ω 5W
C17 3000pf 800V
R14 10K
Q3 2N4402
C14 1µF 50V
R11 1K
R12 3.9K
Z2 393
CR19 IN749A 4.3V
R15 5.1K
CR20 FDH600
J1-2 V BIAS
J1-3 V REF
R50 1.5K
PF ADJ.
R52 1K
R51 1.5K
C45 .01µF 400V
R49 10K
C46 .01µF 400V
Z3
R54 4.7K
R53 56K
PFD
J1-1 DC-GND
T5
05T0064-00
C18 .001µF 1KV
CR7 MR821
CR8 MR821
L2 680µH
C19 .001µF 630V
C20 390µF 40V
C21 390µF 40V
C22 .1µF 100V
R24 75Ω 5W
C23 .01µF 400V
C24 .001µF, 630V
CR9 MR851
CR10 MR851
C25 .001µF 630V
L3 270µH
LM317 U1
V4 ADJ
R25 100Ω 1%
R26 500Ω
R27 681Ω 1%
C26 390µF 40V
C27 220µF 25V
CR11 IN4001
C28 .1µF 100V
C29 .01µF, 400V
C30 .001µF, 630V
CR12 MR851
CR13 MR851
C31 .001µF 630V
L4 270µH
LM317 U2
V3 ADJ
R28 100Ω 1%
R29 500Ω
R30 681Ω 1%
C32 390µF 40V
C33 220µF 25V
CR14 IN4001
C34 .1µF 100V
C35 .01µF 400V
C36 .1µF 100V
R31 10Ω 1/2W
CR15 SD241
L5 32µH
C37 .1µF 100V
R32 10Ω 1/2W
C38 82µF 6.3V
C39 .1µF 100V
C40 .01µF 400V
R33 10Ω
R34 10Ω
R36 681Ω, 1%
R35 562Ω 1%
R40 3.3K
R39 2.7K
C41 .15µF 100V
V1 ADJ.
R37 500Ω
R38 1.3K, 1%
C42 .01µF 400V
R41 6.8K
TB2
+V2
-V2
+V4
-V4
+V3
12V RET
-V3
+5V R.S.
+5V
+5V 20A
+V1
+V1
5V RET
-V1
5V R.S. RET
-V1
-S


63 CR15
65
122 A/R
103
C1-C4, R1
112
115
117
119
VIOLET
18
1
98
105
117 2 REQ'D
94
C20,21,
26,32
55
124 A/R
88
2 REQ'D.
115 VAC JMPR
TEST JMPR
CR15
L1
T1
T2
T3
T4
T5
L2
L3
L4
L5
C5
C6
C7
C38
C27
C33
C26
C32
C21
C20
C1
C2
C3
C4
Z1
Z2
CR16
CR17
CR18
CR1
CR2
CR5
CR6
CR7
CR8
CR9
CR10
CR11
CR12
CR13
CR14
Q1
Q2
Q3
U1
U2
R1
R2
R3
R5
R6
R7
R8
R9
R10
R11
R12
R13
R14
R15
R16
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R26
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C22
C23
C24
C25
C28
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C35
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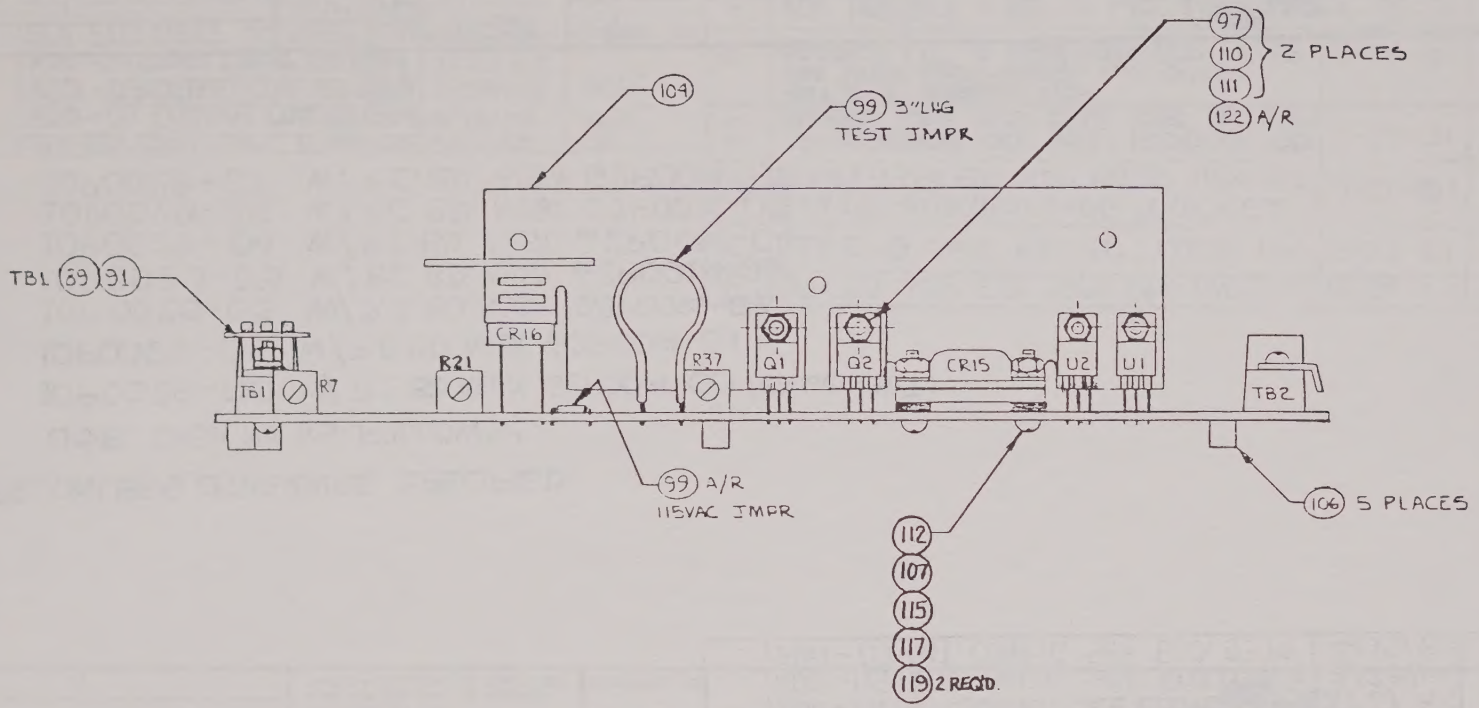
C39
C40
C41
C42
V4
V3
V2
V1
S


97
110
111
2 PLACES
122 A/R
104
99 3"LHG
TEST JMPR
TB1 89 91
TB1
R7
R21
CR16
R37
Q1
Q2
CR15
U2
U1
TB2
99 A/R
115VAC JMPR
106 5 PLACES
112
107
115
117
119 2 REQ'D.

| REVISIONS | | | |
|---|---|---|---|
| LTR | DESCRIPTION | DATE | APPROVED |
| 01 | PROTOTYPE | 1-23-81 | |
| 02 | PROTOTYPE REF TO ECR 1037 | 3-31-81 | RAB |
| A | ADD DASH NO. & REL TO PROD. /ECO. 0063 | 4-20-81 | RAB |
| B | ADD ITEM 12 - SEE ECO. 0075 | 5-14-81 | RAB |
| C | ADD -03 OUT. CONFIG. SEE ECO. 0289<br>ADD -04 OUT. CONFIG. SEE ECO. 0354<br>ADD -05 OUT. CONFIG. SEE ECO. 0369<br>ADD -07 OUT. CONFIG. SEE ECO. 0374 | 8/10/82<br>1/6/83<br>3/28/83<br>4/15/83 | RAB<br><br><br> |

NOTES: UNLESS OTHERWISE SPECIFIED

* ⚠1. USE DASH No. AS FOLLOWS:

10P0029-00 W/ P.C.BD ASSY 62P0014-00 (BASIC UNIT)
10P0029-01 W/ P.C. BD. ASSY. 62P0014-01
10P0029-02 W/ P.C. BD. ASSY. 62P0014-02
10P0029-03 W/ P.C. BD. ASSY. 62P0014-03
10P0029-04 W/ P.C. BD. ASSY. 62P0014-04
10P0029-05 W/ P.C. BD. ASSY 62P0014-05
10P0029-07 W/ P.C. BD. ASSY. 62P0014-07

| | | | | | |
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| | | UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS DECIMALS ANGLES ± .XX ± ± .XXX ± | CONTRACT NO. | | NATIONAL POWER TECHNOLOGY |
| | | | APPROVALS | DATE | PARTS LIST, TOP ASS'Y. |
| | | | DRAWN Kayling (illegible) | 1-23-81 | |
| | | MATERIAL | CHECKED | 2/2/81 | |
| 10A0029-⚠ | 0029 | FINISH | | | SIZE A / CODE IDENT NO. / DRAWING NO. 10P0029-⚠ / REV C |
| | USED ON | | | | |
| APPLICATION | | DO NOT SCALE DRAWING | | | SCALE — / SHEET 1 OF 2 |

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BISHOP GR... /ACCUPRESS
RECORDER ...300

T-10

| LTR | DESCRIPTION | DATE | APPROVED |
|---|---|---|---|
| G | ADD IC SOCKETS ECO0180 | 11/18/81 | |
| H | SEE ECO 0210 | 1-29-82 | |
| J | SEE ECO 0228 | 3-19-82 | |
| K | SEE ECO. 0240 CHG IT. 30, 80 | 4-27-82 | |
| L | ADD SHRINK SLEEVING, ECO. 0276 | 8/5/82 | |
| M | SEE ECO. 0289, MOD. TAB. BLK FOR -03 | 8/10/82 | |
| N | SEE ECO. 0313 ADD QTY TO ALL DASH NOS.<br>ADD -04 OUTPUT CONFIG. ECO 0354<br>ADD -05 OUTPUT CONF. ECO. 0369<br>ADD -07 OUTPUT CONF. EO. 0374<br>SEE ECO. 0384 CHG. IT 71, ADD IT. 75 | 10/26/82<br>1/6/83<br>3/28/83<br>4/14/83<br>5/9/83 | |

REVISIONS

| LTR | DESCRIPTION | DATE | APPROVED |
|---|---|---|---|
| 01 | PROTOTYPE | 1-23-81 | |
| 02 | REVISED - ITEM 21 IS: 2.87K WAS: 3.83K | 3-6-81 | |
| 03 | REVISED ITEM 77 NPT P/N, DEL. 108 | 3-23-81 | |
| 04 | CHANGED ITEM 49, IS: C17, 3000PF, 500V<br>ADDED ITEM 108 WAS: C17, .0022MF, 1KV<br>DELETED ITEM 32, CHG ITEM 33 TO 2 QTY<br>CHANGED ITEM 22 TO 1A, WAS 3A | 3-31-81 | |
| A | ADD TAB. BLK. & REL. TO PROD. / ECO. 0063 | 4-20-81 | |
| B | REVISED P/L & ASSY. DWG. ECO. 0075<br>SEE ALSO ECO. 0085"A" FOR DIODES<br>CR1 & 2 SUBSTITUTION. | 5-14-81 | |
| C | REVISED PER ECO. 0119 CHG. CR1 & 2<br>IS: 12D0004-00, WAS; 13D0001-00 | 7-29-81 | |
| D | REVISED PER ECO 0120 ADDED ITEM 103<br>QTY 12, 90X0003-00, SOCKET | 7-30-81 | |
| E | PER ECO 0151 ADDED: ITEM 15 | 9-28-81 | |
| F | REVISED PER ECO. 0164 MOD. TAB. BLK. | 10-20-81 | |

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|---|---|
| 62A0014-XX | 0029 |
| | USED ON |
| APPLICATION | |

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS DECIMALS ANGLES
± .XX ± ±
.XXX ±

MATERIAL

FINISH

DO NOT SCALE DRAWING

CONTRACT NO.

| APPROVALS | DATE |
|---|---|
| DRAWN | 1-23-81 |
| CHECKED | 1/23/81 |
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NATIONAL POWER TECHNOLOGY

# PARTS LIST, P.C. BD. ASSY

| SIZE | CODE IDENT NO. | DRAWING NO. | REV |
|---|---|---|---|
| A | | 62P0014-XX | N |

SCALE ——— SHEET 1 OF 13

BISHOP GRAPHICS/ACCUPRESS
REORDER NO. A-8360

| REVISIONS | | | |
|---|---|---|---|
| LTR | DESCRIPTION | DATE | APPROVED |
| — | | | |

## TABULATION BLOCK

| P.C. BD. ASSY. P/L | R25 | R27 | R28 | R30 | R24 | R42 | SPECIAL U1, U2 | T5 |
|---|---|---|---|---|---|---|---|---|
| 62P0014-00 (BASIC UNIT) | | | | | | | | |
| 62P0014-01 5/12/12/24 | 100Ω 1/4W, 1% | 681Ω 1/4W, 1% | 100Ω 1/4W, 1% | 681Ω 1/4W, 1% | 270Ω 5W, 10% | 270Ω 5W, 10% | U1-LM350T, 12V@ 3A | 05T0010-00 |
| 62P0014-02 5/12/12/24 | 100Ω 1/4W, 1% | 681Ω 1/4W, 1% | 100Ω 1/4W, 1% | 681Ω 1/4W, 1% | 270Ω 5W, 10% | 270Ω 5W, 10% | U1-LM317T, 12V@1.5A | 05T0010-00 |
| 62P0014-03 5/12 UNREG/15/15 | 100Ω 1/4W, 1% | 845Ω 1/4W, 1% | 100Ω 1/4W, 1% | 845Ω 1/4W, 1% | 75Ω 5W, 10% | — | U1-LM350T, 15V@ 3A 15V@ 1.5A | 05T0045-00 |
| 62P0014-04 5/12/12/5 | 100Ω 1/4W, 1% | 100Ω 1/4W, 1% | 100Ω 1/4W, 1% | 681Ω 1/4W, 1% | 75Ω 5W, 10% | — | U1-LM317T, 12V@1.5A | 05T0054-00 |
| 62P0014-05 5/24/15/15 WITH PED | 100Ω 1/4W, 1% | 845Ω 1/4W, 1% | 100Ω 1/4W, 1% | 845Ω 1/4W, 1% | 200Ω 5W, 10% | 200Ω 5W, 10% | U1 AND U2 = LM350T | 05T0063-00 |
| | | | | | | | | |
| 62P0014-07 5/12/12/12 | 100Ω 1/4W, 1% | 681Ω 1/4W, 1% | 100Ω 1/4W, 1% | 681Ω 1/4W, 1% | 75Ω 5W, 10% | — | U1-LM317T | 05T0064-00 |

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| | | | APPROVALS | DATE | | |
| | | | DRAWN CAE | 1/6/83 | | |
| | | MATERIAL | CHECKED | | | |
| | | FINISH | | | SIZE A | CODE IDENT NO. |
| | 0020 USED ON | | | | DRAWING NO. 62P0014-XX | REV N |
| | APPLICATION | DO NOT SCALE DRAWING | | | SCALE — | SHEET 2 OF 13 |

BISHOP GRAPHICS/ACCUPRESS REORDER 8300

T-12

NATIONAL POWER TECHNOLOGY

# PARTS LIST

Title PARTS LIST, TOP ASSY Dwg. No. 10P0029-⚠ Rev. C

Customer Job No. 0029 2 Sheet of 2

| ITEM NO. | Qty per Dash No. 00 | 01 | 02 | 03 | 04 | 05 | 07 | REFERENCE DESIGNATION | Part or Identifying No. | Description | National Power Tech Part No. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | | | | | | | | NPT | CHASSIS | 10N0017-00 | |
| 2 | 1 | | | | | | | | NPT | P.C.BD. ASSY. | 62A0014-00 | B |
| 3 | 6 | | | | | | | | 6-32 X 7/16 | SCREW, FLT, HD. PHL. 100° | 61H0159-00 | |
| 4 | 1 | | | | | | | | 6-32 X 3/4 | SCREW, FLT HD. PHL. 100° | 61H0162-00 | |
| 5 | 1 | | | | | | | | 6-32 X 1-1/8 | SCREW, FLT. HD. PHL. 100° | 61H0165-00 | |
| 6 | 5 | | | | | | | | № 6 (RADIO) | WASHER, FLAT | 81H0001-00 | |
| 7 | 5 | | | | | | | | № 6 | WASHER, LOCK I.T. | 86H0001-00 | |
| 8 | 5 | | | | | | | | 6-32 (RADIO) | NUT, HEX | 72H0001-00 | |
| 9 | | | | | | | | | | | | |
| 10 | – | 1* | 1* | 1* | 1* | *1 | 1 | SEE NOTE ⚠1 SHT 1 | N.P.T. | P.C. BD. ASSY | 62A0014-XX | C |
| 11 | A/R | | | | | | | | 340 | COMPOUND, THERMAL | 23H0001-00 | |
| 12 | 1 | | | | | | | | NATIONAL PWR. TECH. | LABEL, SERIAL NUMBER | 11Z0004-00 | B |
| 13 | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | |
| 16 | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | |
| 18 | | | | | | | | | | | | |
| 19 | | | | | | | | | | | | |
| 20 | | | | | | | | | | | | |
| 21 | | | | | | | | | | | | |
| 22 | | | | | | | | | | | | |
| 23 | | | | | | | | | | | | |
| 24 | | | | | | | | | | | | |
| 25 | | | | | | | | | | | | |

NATIONAL POWER TECHNOLOGY

# PARTS LIST

Title SWITCHER, P/L | Dwg. No. 62P0014-XX | Rev. N

Customer | Job No. 0029 | Sheet 3 of 13

| ITEM NO. | Qty per Dash No. -00 | -01 | -02 | -03 | -04 | Reference Designation | Part or Identifying No. | Description | National Power Tech Part No. | |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 1 | 1 | 1 | 1 | P.C. BOARD | NPT | P.C. BD. FAB & DRILL | 62D0014-02 | A |
| 2 | | | | | | | | | | |
| 3 | 2 | 2 | 2 | 2 | 2 | R33, 34 | RESISTOR, 10Ω, 1/4W, 5% | CARBON FILM | 32R0100-00 | H |
| 4 | 2 | 2 | 2 | 2 | 2 | R18, 20 | 51Ω | | 32R0510-00 | |
| 5 | 1 | 1 | 1 | 1 | 1 | R22 | 560Ω | | 32R0561-00 | |
| 6 | 1 | 1 | 1 | 1 | 1 | R11 | 1K | | 32R0102-00 | |
| 7 | 1 | 1 | 1 | 1 | 1 | R39 | 2.7K | | 32R0272-00 | |
| 8 | 1 | 1 | 1 | 1 | 1 | R40 | 3.3K | | 32R0332-00 | |
| 9 | 1 | 1 | 1 | 1 | 1 | R12 | 3.9K | | 32R0392-00 | |
| 10 | 1 | 1 | 1 | 1 | 1 | R15 | 5.1K | | 32R0512-00 | |
| 11 | 1 | 1 | 1 | 1 | 1 | R41 | 6.8K | | 32R0682-00 | |
| 12 | 2 | 2 | 2 | 2 | 2 | R14, 16 | 10K | | 32R0103-00 | |
| 13 | 2 | 2 | 2 | 2 | 2 | R6, 9 | 100K | | 32R0104-00 | |
| 14 | 1 | 1 | 1 | 1 | 1 | R8 | RESISTOR, 150K, 1/4W, 5% | CARBON FILM | 32R0154-00 | |
| 15 | – | – | – | – | 1 | R30 | RESISTOR 681Ω 1/4W, 1% | METAL FILM | 42R6810-00 | N |
| 16 | – | – | – | – | 1 | R27 | RESISTOR 100Ω 1/4W 1% | METAL FILM | 42R1000-00 | N |
| 17 | – | 2 | 2 | 2 | 2 | R25, 28 | RESISTOR, 100Ω, 1/4W, 1% | METAL FILM | 42R1000-00 | M |
| 18 | 1 | 1 | 1 | 1 | 1 | R35 | 562Ω | | 42R5620-00 | |
| 19 | 2 | 2 | 2 | – | – | R27, 30 | 681Ω | | 42R6810-00 | M |
| 20 | 1 | 1 | 1 | 1 | 1 | R38 | 1.3K | | 42R1301-00 | |
| 21 | 1 | 1 | 1 | 1 | 1 | R36 | 681Ω | | 42R6810-00 | M |
| 22 | 1 | 1 | 1 | 1 | 1 | R10 | 3.01K | | 42R3011-00 | |
| 23 | 2 | 2 | 2 | 2 | 2 | R4, 5 | RESISTOR, 11K, 1/4W, 1% | METAL FILM | 42R1102-00 | |
| 24 | – | – | – | 2 | – | R27, 30 | RESISTOR 845Ω, 1/4W, 1% | METAL FILM | 42R8450-00 | M |
| 25 | 2 | 2 | 2 | 2 | 2 | R31, 32 | RESISTOR, 10Ω, 1/2W, 5% | CARBON FILM | 33R0100-00 | H |

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NATIONAL POWER TECHNOLOGY

# PARTS LIST

Title SWITCHER, P/L  Dwg. No. 62P0014-XX  REV. N

Customer  Job No. 0029  Sheet 4 of 13

| ITEM NO. | Qty per Dash No. 05 | | 07 | | | Reference Designation | Part or Identifying No. | Description | National Power Tech Part No. |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | | 1 | | | P.C. BOARD | NPT | P.C. BD. FAB & DRILL | 62D0014-02 |
| 2 | 1 | | – | | | P.C. BOARD | NPT | P.C. BD. FAB & DRILL DWG | 61D0006-01 |
| 3 | 2 | | 2 | | | R33, 34 | RESISTOR, 10Ω, 1/4W, 5% | CARBON FILM | 32R0100-00 |
| 4 | 2 | | 2 | | | R18, 20 | 51Ω | " | 32R0510-00 |
| 5 | 1 | | 1 | | | R22 | 560Ω | " | 32R0561-00 |
| 6 | 1 | | 1 | | | R11 | 1K | " | 32R0102-00 |
| 7 | 1 | | 1 | | | R39 | 2.7K | " | 32R0272-00 |
| 8 | 1 | | 1 | | | R40 | 3.3K | " | 32R0332-00 |
| 9 | 1 | | 1 | | | R12 | 3.9K | " | 32R0392-00 |
| 10 | 1 | | 1 | | | R15 | 5.1K | " | 32R0512-00 |
| 11 | 1 | | 1 | | | R41 | 6.8K | " | 32R0682-00 |
| 12 | 3 | | 2 | | | R14, 16, 49 | 10K | " | 32R0103-00 |
| 13 | 2 | | 2 | | | R6, 9 | 100K | " | 32R0104-00 |
| 14 | 1 | | 1 | | | R8 | RESISTOR, 150K, 1/4W, 5% | CARBON FILM | 32R0154-00 |
| 15 | – | | – | | | R30 | RESISTOR 681Ω 1/4W, 1% | METAL FILM | 42R6810-00 |
| 16 | – | | – | | | R27 | RESISTOR 100Ω 1/4W, 1% | METAL FILM | 42R1000-00 |
| 17 | 2 | | 2 | | | R25, 28 | RESISTOR, 100Ω, 1/4W, 1% | METAL FILM | 42R1000-00 |
| 18 | 1 | | 1 | | | R35 | 562Ω | " | 42R5620-00 |
| 19 | – | | 2 | | | R27, 30 | 681Ω | " | 42R6810-00 |
| 20 | 1 | | 1 | | | R38 | 1.3K | " | 42R1301-00 |
| 21 | 1 | | 1 | | | R36 | 681Ω | " | 42R6810-00 |
| 22 | 1 | | 1 | | | R10 | 3.01K | " | 42R3011-00 |
| 23 | 2 | | 2 | | | R4, 5 | RESISTOR, 11K, 1/4W, 1% | METAL FILM | 42R1102-00 |
| 24 | 2 | | – | | | R27, 30 | RESISTOR 845Ω, 1/4W, 1% | METAL FILM | 42R8450-00 |
| 25 | 2 | | 2 | | | R31, 32 | RESISTOR, 10Ω, 1/2W, 5% | CARBON FILM | 33R0100-00 |

National Power Technology

# PARTS LIST

Title SWITCHER, P/L | Dwg. No. 62P0014-XX | Rev. N

Customer | Job No. 0029 | Sheet 5 of 13

| ITEM NO. | Qty per Dash No. -00 | -01 | -02 | -03 | -04 | Reference Designation | Part or Identifying No. | Description | National Power Tech Part No. |
|---|---|---|---|---|---|---|---|---|---|
| 26 | 2 | 2 | 2 | 2 | 2 | R17, 19 | RESISTOR, 5.1Ω, 1/2W, 5% | CARBON FILM | 33R0518-00 |
| 27 | 2 | 2 | 2 | 2 | 2 | R2, 3 | RESISTOR, 100K, 1/2W, 5% | CARBON FILM | 33R0104-00 |
| 28 | – | – | – | 1 | 1 | R24 | RESISTOR 75Ω, 5W, 10% | WIREWOUND | 57R0750-00 |
| 29 | 1 | 1 | 1 | 1 | 1 | R23 | RESISTOR, 50Ω, 5W, 10% | WIREWOUND | 57R0500-00 |
| 30 | – | 2 | 2 | – | – | R24, 42 | RESISTOR, 270Ω, 5W, 10% | WIREWOUND | 57R0271-00 |
| 31 | 2 | 2 | 2 | 2 | 2 | R26, 29 | POT., VARI., 500Ω, 1/2W, 10% | MULTI-TURN, T.A. | 83R0501-02 |
| 32 | | | | | | | | | |
| 33 | 2 | 2 | 2 | 2 | 2 | R21, 37 | POT., VARI., 500Ω, 1/2W, 10% | SINGLE-TURN, S.A. | 73R0501-01 |
| 34 | 1 | 1 | 1 | 1 | 1 | R7 | POT., VARI., 100K, 1/2W, 10% | SINGLE-TURN, S.A. | 73R0104-01 |
| 35 | | | | | | | | | |
| 36 | 1 | 1 | 1 | 1 | 1 | R1 | THERMISTOR, 10Ω | CL-60 | 96R0002-00 |
| 37 | | | | | | | | | |
| 38 | 2 | 2 | 2 | 2 | 2 | C1, 4 | CAPACITOR, .1μF, 400V | CERAMIC DISC | 15C0001-00 |
| 39 | 2 | 2 | 2 | 2 | 2 | C2, 3 | .01μF, 1.4KV | CERAMIC DISC | 15C0002-00 |
| 40 | 1 | 1 | 1 | 1 | 1 | C18 | .001μF, 1KV | CERAMIC DISC | 15C0006-00 |
| 41 | 8 | 8 | 8 | 8 | 8 | C9, 15, 22, 28, 34, 36, 37, 39 | .1μF, 100V | METALIZED POLYESTER | 13C0018-00 |
| 42 | 1 | 1 | 1 | 1 | 1 | C41 | .15μF, 100V | " | 13C0013-00 |
| 43 | 1 | 1 | 1 | 1 | 1 | C10 | .33μF, 100V | " | 13C0019-00 |
| 44 | 6 | 6 | 6 | 6 | 6 | C12, 23, 29, 35, 40, 42 | .01μF, 400V | " | 13C0011-00 |
| 45 | | | | | | | | | |
| 46 | 1 | 1 | 1 | 1 | 1 | C11 | .033μF, 250V | " | 13C0020-00 |
| 47 | 1 | 1 | 1 | 1 | 1 | C13 | .056μF, 250V | " | 13C0021-00 |
| 48 | 5 | 5 | 5 | 5 | 5 | C19, 24, 25, 30, 31 | .001μF, 630V | " | 13C0015-00 |
| 49 | 1 | 1 | 1 | 1 | 1 | C17 | 3000pf, 500V | " | 20C0002-00 |
| 50 | 1 | 1 | 1 | 1 | 1 | C16 | CAPACITOR 1μF, 250V | METALIZED POLYESTER | 13C0017-00 |

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NATIONAL POWER TECHNOLOGY

# PARTS LIST

Title SWITCHER, P/L | Dwg. No. 62P0014-XX | Rev. N

Customer | Job No. 0029 | Sheet 6 of 13

| ITEM NO. | Qty per Dash No. 05 | | 07 | | | Reference Designation | Part or Identifying No. | Description | National Power Tech Part No. |
|---|---|---|---|---|---|---|---|---|---|
| 26 | 2 | | 2 | | | R17, 19 | RESISTOR, 5.1Ω, 1/2W, 5% | CARBON FILM | 33R0518-00 |
| 27 | 2 | | 2 | | | R2, 3 | RESISTOR, 100K, 1/2W, 5% | CARBON FILM | 33R0104-00 |
| 28 | – | | 1 | | | R24 | RESISTOR 75Ω, 5W, 10% | WIREWOUND | 57R0750-00 |
| 29 | 1 | | 1 | | | R23 | RESISTOR, 50Ω, 5W, 10% | WIREWOUND | 57R0500-00 |
| 30 | – | | – | | | R24, 42 | RESISTOR, 270Ω, 5W, 10% | WIREWOUND | 57R0271-00 |
| 31 | 2 | | 2 | | | R26, 29 | POT., VARI., 500Ω, 1/2W, 10% | MULTI-TURN, T.A. | 83R0501-02 |
| 32 | 1 | | – | | | R52 | POT. 1K 1/2W, 10% | MULTI-TURN, V.MT., T.A. | 83R0102-02 |
| 33 | 2 | | 2 | | | R21, 37 | POT., VARI., 500Ω, 1/2W, 10% | SINGLE-TURN, S.A. | 73R0501-01 |
| 34 | 1 | | 1 | | | R7 | POT., VARI., 100K, 1/2W, 10% | SINGLE-TURN, S.A. | 73R0104-01 |
| 35 | 2 | | – | | | R24, 42 | RESISTOR 200Ω, 5W, 10% | WIREWOUND | 57R0201-00 |
| 36 | 1 | | 1 | | | R1 | THERMISTOR, 10Ω | CL-60 | 96R0002-00 |
| 37 | 2 | | – | | | R50, 51 | RESISTOR 1.5K 1/4W, 5% | CARBON FILM | 32R0152-00 |
| 38 | 2 | | 2 | | | C1, 4 | CAPACITOR .1μF, 400V | CERAMIC DISC | 15C0001-00 |
| 39 | 2 | | 2 | | | C2, 3 | CAPACITOR .01μF, 1.4KV | CERAMIC DISC | 15C0002-00 |
| 40 | 1 | | 1 | | | C18 | .001μF, 1KV | CERAMIC DISC | 15C0006-00 |
| 41 | 8 | | 8 | | | C9, 15, 22, 28, 34, 36, 37, 39 | .1μF, 100V | METALIZED POLYESTER | 13C0018-00 |
| 42 | 1 | | 1 | | | C41 | .15μF, 100V | " | 13C0013-00 |
| 43 | 1 | | 1 | | | C10 | .33μF, 100V | " | 13C0019-00 |
| 44 | 8 | | 6 | | | C12, 23, 29, 35, 40, 42 | .01μF, 400V | " | 13C0011-00 |
| 45 | | | – | | | 45, 46 | | | |
| 46 | 1 | | 1 | | | C11 | .033μF, 250V | " | 13C0020-00 |
| 47 | 1 | | 1 | | | C13 | .056μF, 250V | " | 13C0021-00 |
| 48 | 5 | | 5 | | | C19, 24, 25, 30, 31 | .001μF, 630V | " | 13C0015-00 |
| 49 | 1 | | 1 | | | C17 | 3000 pf, 500V | " | 20C0002-00 |
| 50 | 1 | | 1 | | | C16 | CAPACITOR 1μF, 250V | METALIZED POLYESTER | 13C0017-00 |

NATIONAL POWER TECHNOLOGY

# PARTS LIST

Title SWITCHER, P/L | Dwg. No. 62P0014-XX | Rev. N

Customer | Job No. 0029 | Sheet 7 of 13

| ITEM NO | Qty per Dash No. 00 | -01 | -02 | -03 | 04 | Reference Designation | Part or Identifying No. | Description | National Power Tech Part No. |
|---|---|---|---|---|---|---|---|---|---|
| 51 | | | | | | | | | |
| 52 | | | | | | | | | |
| 53 | 2 | 2 | 2 | 2 | 2 | C5, 6 | CAPACITOR, 330μF, 200V | ALUM. ELECTROLYTIC | 37C0005-00 |
| 54 | 1 | 1 | 1 | 1 | 1 | C7 | 1000μF, 25V | | 37C0009-00 |
| 55 | 4 | 4 | 4 | 4 | 4 | C20, 21, 26, 32 | 390μF, 40V | | 37C0001-00 |
| 56 | 2 | 2 | 2 | 2 | 2 | C27, 33 | 220μF, 25V | | 37C0008-00 |
| 57 | 1 | 1 | 1 | 1 | 1 | C38 | 8.2KμF, 6.3V | | 37C0010-00 |
| 58 | 2 | 2 | 2 | 2 | 2 | C8, 14 | CAPACITOR 1μF, 50V | ALUM. ELECTROLYTIC | 35C0009-00 |
| 59 | | | | | | | | | |
| 60 | 2 | 2 | 2 | 2 | 2 | CR1, 2 | DIODE AMPEREX BYV95A | RECT. 200V, 1.5A, F.R. | 12D0004-00 |
| 61 | 1 | 1 | 1 | 1 | 1 | CR16 | DIODE, BRIDGE, VJ448 | 400V 10A N.C. AVAL | 23D0002-00 |
| 62 | 2 | 2 | 2 | 2 | 2 | CR17, 18 | DIODE, BRIDGE, WO2M | 100V 1.5A SILICONE | 21D0001-00 |
| 63 | 1 | 1 | 1 | 1 | 1 | CR15 | DIODE, PWR. SD241 | DUAL, RECT (TO-3) | 35D0003-00 |
| 64 | 2 | 2 | 2 | 2 | 2 | CR3, 4 | DIODE, IN4933 | 50V 1A FAST REC. | 10D0007-00 |
| 65 | 2 | 2 | 2 | 2 | 2 | CR5, 6 | DIODE, IN4936 | 400V 1A FAST REC. | 13D0001-00 |
| 66 | 2 | 2 | 2 | 2 | 2 | CR7, 8 | DIODE, MR821 | 100V 5A FAST REC | 11D0005-00 |
| 67 | 4 | 4 | 4 | 4 | 4 | CR9, 10, 12, 13 | DIODE, MR851 | 100V 3A FAST REC | 11D0004-00 |
| 68 | 2 | 2 | 2 | 2 | 2 | CR11, 14 | DIODE, IN4001 | 50V 1A SILICONE | 10D0008-00 |
| 69 | 1 | 1 | 1 | 1 | 1 | CR19 | DIODE, ZENER, IN749A | 4.3V, 400MW | 28D0009-00 |
| 70 | 1 | 1 | 1 | 1 | 1 | CR20 | DIODE, FDH600 | FAST REC | 10D0001-00 |
| 71 | 1 | 1 | 1 | 1 | 1 | U2 | REGULATOR, VOLT, LM317T | VOLT. REG. (TO-220) | 60Q0008-00 |
| 72 | 1 | 1 | 1 | 1 | 1 | Z1 | REG., PWM, I.C., TL494 | VOLTAGE REG. IC | 60Q0012-00 |
| 73 | 1 | 1 | 1 | 1 | 1 | Z2 | COMP., DUAL, LM393N | VOLTAGE COMPARATOR | 60Q0013-00 |
| 74 | - | - | 1 | - | 1 | U1 * | REGULATOR, VOLT, LM317T | VOLT. REG (TO220) | 60Q0008-00 |
| 75 | - | 1 | - | 1 | - | U1 * | REGULATOR, VOLT, LM350T | 3A (TO-220) | 60Q0018-00 |



* REFER TO TAB. BLK. ON PAGE 2

NATIONAL POWER — TECHNOLOGY

# PARTS LIST

Title SWITCHER, P/L | Dwg. No. 62P0014-XX | Rev. N

Customer | Job No. 0029 | Sheet 8 of 13

| ITEM NO. | Qty per Dash No. -05 | -07 | Reference Designation | Part or Identifying No. | Description | National Power Tech Part No. | |
|---|---|---|---|---|---|---|---|
| 51 | 1 | – | R53 | RESISTOR 56K, 1/4 W, 5% | CARBON FILM | 32R0563-00 | |
| 52 | 1 | – | R54 | RESISTOR 4.7K 1/4W, 5% | CARBON FILM | 32R0472-00 | |
| 53 | 2 | 2 | C5, 6 | CAPACITOR, 330μF, 200V | ALUM. ELECTROLYTIC | 37C0005-00 | |
| 54 | 1 | 1 | C7 | 1000μF, 25V | ↑ | 37C0009-00 | |
| 55 | 4 | 4 | C20, 21, 26, 32 | 390μF, 40V | ↕ | 37C0001-00 | |
| 56 | 2 | 2 | C27, 33 | 220μF, 25V | ↕ | 37C0008-00 | |
| 57 | 1 | 1 | C38 | 8.2KμF, 6.3V | ↓ | 37C0010-00 | |
| 58 | 2 | 2 | C8, 14 | CAPACITOR 1μF, 50V | ALUM. ELECTROLYTIC | 35C0009-00 | |
| 59 | | | | | | | |
| 60 | 2 | 2 | CR1, 2 | DIODE AMPEREX BYV95A | RECT. 200V, 1.5A, F.R. | 12D0004-00 | |
| 61 | 1 | 1 | CR16 | DIODE, BRIDGE, VJ448 | 400V 10A N.C. AVAL | 23D0002-00 | |
| 62 | 2 | 2 | CR17, 18 | DIODE, BRIDGE, W02M | 100V 1.5A SILICONE | 21D0001-00 | |
| 63 | 1 | 1 | CR15 | DIODE, PWR. SD241 | DUAL, RECT (TO-3) | 35D0003-00 | |
| 64 | 2 | 2 | CR3, 4 | DIODE, IN4933 | 50V 1A FAST REC. | 10D0007-00 | |
| 65 | 2 | 2 | CR5, 6 | DIODE, IN4936 | 400V 1A FAST REC. | 13D0001-00 | |
| 66 | 2 | 2 | CR7, 8 | DIODE, MR821 | 100V 5A FAST REC | 11D0005-00 | |
| 67 | 4 | 4 | CR9, 10, 12, 13 | DIODE, MR851 | 100V 3A FAST REC | 11D0004-00 | |
| 68 | 2 | 2 | CR11, 11 | DIODE, IN4001 | 50V 1A SILICONE | 10D0008-00 | |
| 69 | 1 | 1 | CR19 | DIODE, ZENER, IN749A | 4.3V, 400MW | 28D0009-00 | |
| 70 | 1 | 1 | CR20 | DIODE, FDH600 | FAST REC | 10D0001-00 | |
| 71 | – | 1 | U2 | REGULATOR, VOLT, LM317T | VOLT. REG (TO-220) | 60Q0008-00 | N |
| 72 | 1 | 1 | Z1 | REG., PWM, I.C., TL494 | VOLTAGE REG. IC | 60Q0012-00 | |
| 73 | 2 | 1 | Z2, 3 | COMP, DUAL, LM393N | VOLTAGE COMPARATOR | 60Q0013-00 | |
| 74 | – | 1 | U1 * | REGULATOR, VOLT, LM317T | VOLT. REG (TO220) | 60Q0008-00 | |
| 75 | 2 | – | U1, 2 * | REGULATOR, VOLT, LM350T | 3A (TO-220) | 60Q0018-00 | N |

01E0003 REV A

* REFER TO TAB. H.K. ON PAGE 2

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# PARTS LIST

Title SWITCHER, P/L | Dwg. No. 62P0014-XX | Rev. N

Customer | Job No. 0029 | Sheet 9 of 13

| ITEM NO. | Qty per Dash No. 00 | 01 | 02 | 03 | 04 | Reference Designation | Part or Identifying No. | Description | National Power Tech Part No. | |
|---|---|---|---|---|---|---|---|---|---|---|
| 76 | 2 | 2 | 2 | 2 | 2 | Q1,2 | TRANS., SW., MJE13006 | TRANSISTOR, SW. | 15Q0005-00 | |
| 77 | 1 | 1 | 1 | 1 | 1 | Q3 | TRANS. 2N4402 | TRANSISTOR (PNP) | 12Q0005-00 | 0 |
| 78 | | | | | | | | | | |
| 79 | 1 | 1 | 1 | 1 | 1 | L1 | 4A RMS | INDUCTOR | 15L0002-00 | A |
| 80 | 1 | 1 | 1 | 1 | 1 | L2 | 680 μH, 3A | INDUCTOR | 25L0018-00 | K |
| 81 | 2 | 2 | 2 | 2 | 2 | L3,4 | 270 μH, 2A | INDUCTOR | 25L0002-00 | |
| 82 | 1 | 1 | 1 | 1 | 1 | L5 | 32 μH | INDUCTOR | 25L0003-00 | |
| 83 | — | — | — | 1 | — | T5 | NAT. PWR. TECH. | TRANSFORMER, POWER | 05T0045-00 | M |
| 84 | 1 | 1 | 1 | 1 | 1 | T1 | ▲ | TRANSFORMER, BIAS | 10T0003-00 | A |
| 85 | 2 | 2 | 2 | 2 | 2 | T2,3 | ↕ | TRANSFORMER, DRIVE | 07T0003-00 | A |
| 86 | 1 | 1 | 1 | 1 | 1 | T4 | ▼ | TRANSFORMER, CURRENT | 07T0002-00 | A |
| 87 | + | 1 | 1 | — | — | T5 | NAT. PWR. TECH. | TRANSFORMER, POWER | 05T0010-00 | A |
| 88 | 2 | 2 | 2 | 2 | 2 | TB2 (REF) | (MAGNUM) JB2 | JMPRS, TERM STRIP | 00E0003-00 | |
| 89 | 1 | 1 | 1 | 1 | 1 | TB1 | 3 POS. (MP) | TERMINAL STRIP | 11E0012-00 | |
| 90 | 1 | 1 | 1 | 1 | 1 | TB2 | 12 POS. | TERMINAL STRIP | 11E0013-00 | |
| 91 | 1 | 1 | 1 | 1 | 1 | TB1 (REF) | (MAGNUM) CV203 | COVER, TRM. STRP. W/ RET. | 00E0004-00 | |
| 92 | 1 | 1 | 1 | 1 | 1 | F1 | 3AG, 4A, 250V | FUSE, NOR-BLO | 11F0010-00 | 04 |
| 93 | 2 | 2 | 2 | 2 | 2 | F1 (REF) | SOLDERABLE | CLIP, FUSE | 16F0001-00 | |
| 94 | 1 | 1 | 1 | 1 | 1 | L5 (REF) | NO. 4 | WASHER, FLAT | 84H0001-00 | D |
| 95 | 1 | 1 | 1 | 1 | 1 | CR15 (REF) | | INSULATOR, MICA | 00Q0002-00 | |
| 96 | 2 | 2 | 2 | 2 | 2 | U1,2 (REF) | | INSULATOR, MICA | 00Q0007-00 | |
| 97 | 2 | 2 | 2 | 2 | 2 | Q1,2 (REF) | | INSULATOR, OXIDE | 00Q0008-00 | |
| 98 | 1 | 1 | 1 | 1 | 1 | (REF) Z1 | 70716-01 SCANBE | IC SOCKET, 16 PIN | 61Q0004-00 | G |
| 99 | A/R | A/R | A/R | A/R | A/R | JUMPERS | | WIRE 18 GA | 18W0111-13 | A |
| 100 | 1 | 1 | 1 | 1 | 1 | (REF) Z2 | 70708-01 SCANBE | IC SOCKET, 8 PIN | 61Q0002-00 | |

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# PARTS LIST

Title SWITCHER, P/L | Dwg. No. 62P0014-XX | Rev. N

Customer | Job No. 0029 | Sheet 10 of 13

| ITEM NO. | Qty per Dash No. -05 | Qty per Dash No. -07 | Reference Designation | Part or Identifying No. | Description | National Power Tech Part No. |
|---|---|---|---|---|---|---|
| 76 | 2 | 2 | Q1,2 | TRANS., SW., MJE13006 | TRANSISTOR, SW. | 15Q0005-00 |
| 77 | 1 | 1 | Q3 | TRANS. 2N4402 | TRANSISTOR (PNP) | 12Q0005-00 |
| 78 | | | | | | |
| 79 | 1 | 1 | L1 | 4A RMS | INDUCTOR | 15L0002-00 |
| 80 | 1 | 1 | L2 | 680 μH, 3A | INDUCTOR | 25L0018-00 |
| 81 | 2 | 2 | L3,4 | 270 μH, 2A | INDUCTOR | 25L0002-00 |
| 82 | 1 | 1 | L5 | 32 μH | INDUCTOR | 25L0003-00 |
| 83 | – | – | T5 | NAT. PWR. TECH. | TRANSFORMER, POWER | 05T0045-00 |
| 84 | 1 | 1 | T1 | ↑ | TRANSFORMER, BIAS | 10T0003-00 |
| 85 | 2 | 2 | T2,3 | | TRANSFORMER, DRIVE | 07T0003-00 |
| 86 | 1 | 1 | T4 | ↓ | TRANSFORMER, CURRENT | 07T0002-00 |
| 87 | – | – | T5 | NAT. PWR. TECH. | TRANSFORMER, POWER | 05T0010-00 |
| 88 | 2 | 2 | TB2 (REF) | (MAGNUM) JB2 | JMPRS. TERM STRIP | 00E0003-00 |
| 89 | 1 | 1 | TB1 | 3 POS. (MP) | TERMINAL STRIP | 11E0012-00 |
| 90 | 1 | 1 | TB2 | 12 POS. | TERMINAL STRIP | 11E0013-00 |
| 91 | 1 | 1 | TB1 (REF) | (MAGNUM) CV203 | COVER, TRM. STRP. W/RET. | 00E0004-00 |
| 92 | 1 | 1 | F1 | 3AG, 4A, 250V | FUSE, NOR-BLO | 11F0010-00 |
| 93 | 2 | 2 | F1 (REF) | SOLDERABLE | CLIP, FUSE | 16F0001-00 |
| 94 | 1 | 1 | L5 (REF) | NO. 4 | WASHER, FLAT | 84H0001-00 |
| 95 | 1 | 1 | CR15 (REF) | | INSULATOR MICA | 00Q0002-00 |
| 96 | 2 | 2 | U1,2 (REF) | | INSULATOR, MICA | 00Q0007-00 |
| 97 | 2 | 2 | Q1,2 (REF) | | INSULATOR, OXIDE | 00Q0008-00 |
| 98 | 1 | 1 | (REF) Z1 | 70716-01 SCANBE | IC SOCKET, 16 PIN | 61Q0004-00 |
| 99 | A/R | A/R | JUMPERS | | WIRE 18 GA | 18W0111-13 |
| 100 | 1 | 1 | (REF) Z2 | 70708-01 SCANBE | IC SOCKET, 8 PIN | 61Q0002-00 |

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# PARTS LIST

Title SWITCHER, P/L | Dwg. No. 62P0014-XX | Rev. N

Customer | Job No. 0029 | Sheet 11 of 13

| ITEM NO. | Qty per Dash No. 00 | 01 | 02 | 03 | 04 | Reference Designation | Part or Identifying No. | Description | National Power Tech Part No. | |
|---|---|---|---|---|---|---|---|---|---|---|
| 101 | A/R | A/R | A/R | A/R | A/R | T6 (REF) | PVC-105/3/8-UL | TUBING, SHRINK | 26H0009-00 | |
| 102 | A/R | A/R | A/R | A/R | A/R | T5, L5 (REF) | PVC-105/1/4-UL | TUBING, SHRINK | 26H0010-00 | |
| 103 | A/R | A/R | A/R | A/R | A/R | C1,2,3,4, & R1 | ALPHA FIT 221-3/4 H.L MARKED | HEAT SHRINK TUB. 3/4 DIA | 26H0014-00 | L |
| 104 | 1 | 1 | 1 | 1 | 1 | Q1,2, CR16, U1,2 (REF) | NPT | HEATSINK | 42N0018-00 | |
| 105 | 1 | 1 | 1 | 1 | 1 | L5 (REF) | 1/8 DIA -.125 X .187 GR | RIVET | 30H0007-00 | B |
| 106 | 5 | 5 | 5 | 5 | 5 | STAND-OFF | 6-32 x 1/4 LG x 1/4 OD | SWAGE, BRASS | 43H0054-00 | |
| 107 | 2 | 2 | 2 | 2 | 2 | CR15 (REF) | Nº 6 CLEARANCE (FIBER) | WASHER, SHLDR | 89H0006-00 | |
| 108 | 2 | 2 | 2 | 2 | 2 | U1,2 (REF) | | WASHER, SHLDR | 89H0007-00 | O |
| 109 | — | — | — | — | 1 | T5 | NATIONAL POWER TECH | TRANSFORMER, POWER | 05T0054-00 | N |
| 110 | 2 | 2 | 2 | 2 | 2 | | 6-32 x 1/2 (NYLON) | SCREW, FLAT HD | 65H0006-00 | |
| 111 | 2 | 2 | 2 | 2 | 2 | | 6-32 NYLON | NUT, HEX. | 74H0020-00 | |
| 112 | 3 | 3 | 3 | 3 | 3 | | 6-32 X 3/4 | SCREW, PAN.HD.PHL | 61H0026-00 | |
| 113 | 1 | 1 | 1 | 1 | 1 | | 6-32 x 5/8 | SCREW, PAN.HD.PHL | 61H0025-00 | |
| 114 | 2 | 2 | 2 | 2 | 2 | | 4-40 X 3/8 | SCREW, PAN, HD.PHL | 61H0012-00 | |
| 115 | 4 | 4 | 4 | 4 | 4 | | 6-32 | NUT, HEX (RADIO) | 72H0001-00 | |
| 116 | 2 | 2 | 2 | 2 | 2 | | 4-40 | NUT, HEX (RADIO) | 72H0004-00 | |
| 117 | 7 | 7 | 7 | 7 | 7 | | Nº 6 (RADIO) | WASHER, FLAT | 81H0001-00 | |
| 118 | 2 | 2 | 2 | 2 | 2 | | Nº 4 (RADIO) | WASHER, FLAT | 81H0002-00 | |
| 119 | 6 | 6 | 6 | 6 | 6 | | Nº 6 | WASHER, LOCK I.T. | 86H0001-00 | |
| 120 | 2 | 2 | 2 | 2 | 2 | | Nº 4 | WASHER, LOCK I.T. | 86H0005-00 | |
| 121 | | | | | | | | | | |
| 122 | A/R | A/R | A/R | A/R | A/R | Q1,2, CR15,16, U1,2 (REF) | 340, DOW CORNING | COMPOUND, THERMAL | 23H0001-00 | |
| 123 | | | | | | | | | | |
| 124 | A/R | A/R | A/R | A/R | A/R | C20,21,26,32, L2,3,4 (REF) | RTV118, GE | RUBBER, SILICONE | 23H0002-00 | |
| 125 | | | | | | | | | | |

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NATIONAL POWER TECHNOLOGY

# PARTS LIST

Title SWITCHER, P/L | Dwg. No. 62P0014-XX | Rev. N

Customer | Job No. 0029 | Sheet 12 of 13

| ITEM NO. | Qty per Dash No. -05 | Qty per Dash No. -07 | Reference Designation | Part or Identifying No. | Description | National Power Tech Part No. |
|---|---|---|---|---|---|---|
| 101 | A/R | A/R | T5 (REF) | PVC-105/3/8-UL | TUBING, SHRINK | 26H0009-00 |
| 102 | A/R | A/R | T5, L5 (REF) | PVC-105/1/4-UL | TUBING, SHRINK | 26H0010-00 |
| 103 | A/R | A/R | C1,2,3,4, & R1 | ALPHA FIT 221-3/4 H.L. MARKED | HEAT SHRINK TUB. 3/4 DIA | 26H0014-00 |
| 104 | 1 | 1 | Q1,2, CR16, U1,2 (REF) | NPT | HEATSINK | 42N0018-00 |
| 105 | 1 | 1 | L5 (REF) | 1/8 DIA - .125 X .187 GR | RIVET | 30H0007-00 |
| 106 | 5 | 5 | STAND-OFF | 6-32 X 1/4 LG X 1/4 OD | SWAGE, BRASS | 43H0054-00 |
| 107 | 2 | 2 | CR15 (REF) | Nº 6 CLEARANCE (FIBER) | WASHER, SHLDR | 89H0006-00 |
| 108 | 2 | 2 | U1,2 (REF) | | WASHER, SHLDR | 89H0007-00 |
| 109 | - | - | T5 | NATIONAL POWER TECH | TRANSFORMER, POWER | 05T0054-00 |
| 110 | 2 | 2 | | 6-32 X 1/2 (NYLON) | SCREW, FLAT HD | 65H0006-00 |
| 111 | 2 | 2 | | 6-32 NYLON | NUT, HEX | 74H0020-00 |
| 112 | 3 | 3 | | 6-32 X 3/4 | SCREW, PAN, HD. PHL | 61H0026-00 |
| 113 | 1 | 1 | | 6-32 X 5/8 | SCREW, PAN. HD. PHL | 61H0025-00 |
| 114 | 2 | 2 | | 4-40 X 3/8 | SCREW, PAN, HD. PHL | 61H0012-00 |
| 115 | 4 | 4 | | 6-32 | NUT, HEX (RADIO) | 72H0001-00 |
| 116 | 2 | 2 | | 4-40 | NUT, HEX (RADIO) | 72H0004-00 |
| 117 | 7 | 7 | | Nº 6 (RADIO) | WASHER, FLAT | 81H0001-00 |
| 118 | 2 | 2 | | Nº 4 (RADIO) | WASHER, FLAT | 81H0002-00 |
| 119 | 6 | 6 | | Nº 6 | WASHER, LOCK I.T. | 86H0001-00 |
| 120 | 2 | 2 | | Nº 4 | WASHER, LOCK I.T. | 86H0005-00 |
| 121 | | | | | | |
| 122 | A/R | A/R | Q1,2, CR15,16, U1,2 (REF) | 340, DOW CORNING | COMPOUND, THERMAL | 23H0001-00 |
| 123 | - | 1 | T5 | NATIONAL PWR. TECH. | TRANSFORMER, PWR | 05T0064-00 |
| 124 | A/R | A/R | C20,21,26,32, L2,3,4 (REF) | RTV118, GE | RUBBER, SILICONE | 23H0002-00 |
| 125 | 1 | - | T5 | NATIONAL PWR TECH | TRANSFORMER, PWR | 05T0063-00 |

NATIONAL POWER TECHNOLOGY

# PARTS LIST

Title P.C.BD. ASSY. Dwg. No. 62P0014-XX Rev. N

Customer Job No. 0029-05 Sheet 13 of 13

| ITEM NO. | Qty per Dash No. -05 | | -07 | | | Reference Designation | Part or Identifying No. | Description | National Power Tech Part No. |
|---|---|---|---|---|---|---|---|---|---|
| 126 | 2 | | - | | | PFD P.C.BD. (REF) | AMATOM 2322-F141 | WASHER, FLAT, FIBER | 85H0003-00 |
| 127 | 4" | | - | | | | WIRE, LEAD, STRANDED | 22 GA, BRN | 22W0111-13 |
| 128 | 3.5" | | - | | | | WIRE, LEAD, STRANDED | 22GA, RED | 22W0222-13 |
| 129 | 3.5" | | - | | | | WIRE, LEAD, STRANDED | 22 GA., ORN | 22W0333-13 |
| 130 | 1 | | - | | | | SST-1M PANDUIT | TIE WRAPP | 03W0004-00 |
| 131 | 1 | | - | | | PFD. P.C.BD. (REF) | USECO 4506 B | TERM. SWAGE | 51H0004-00 |
| 132 | | | | | | | | | |
| 133 | | | | | | | | | |
| 134 | | | | | | | | | |
| 135 | | | | | | | | | |

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